

ALABAMA DEPARTMENT OF TRANSPORTATION

SAW BLADE SPECIFICATIONS

May 3, 2010

1. SCOPE AND CLASSIFICATION

- 1.1 SCOPE** This specification covers circular, steel cored, diamond saw blades for cutting cured or green concrete and asphalt.
- 1.2 CLASSIFICATION** The saw blades furnished under this specification shall be of premium quality and will include all of the following types and sizes as specified

Type A - Cured Concrete

Sizes - 12 inches (30.48 centimeters) diameter.
14 inches (35.56 centimeters) diameter.
18 inches (45.72 centimeters) diameter.
30 inches (76.20 centimeters) diameter.
36 inches (91.44 centimeters) diameter.

Type B- Green Concrete or Asphalt

Sizes- 12-inches (30.48 centimeters) diameter.
14 inches (35.56 centimeters) diameter.
18 inches (45.72 centimeters) diameter.
30 inches (76.20 centimeters) diameter.
36 inches (91.44 centimeters) diameter.

2. REQUIREMENTS

- 2.1 GENERAL** This specification is not intended to describe all of the details of construction or materials used since it is recognized that there are variations in the manufacturing processes and techniques used by the different manufacturers of diamond saw blades.
- 2.2 DESCRIPTION** The saw blades furnished under this specification shall be the circular type with diamond segments bonded to the periphery of a heat treated steel core.
- 2.3 STEEL CORE** The steel cores shall be slotted between segments. Each slot shall have a keyhole at the bottom. Slot width, length, and keyhole diameter shall be as specified in Table I. All steel cores thicknesses shall be as specified in Table I. All steel cores except the 12" shall be heat treated and tensioned for safe operation at a minimum surface speed of 9,000 feet per minute. The 12" cores shall be heat treated and tensioned for a safe operating speed of 3,000 RPM.

2.4 DIAMOND SEGMENTS Diamond segments shall be bonded to the periphery of the steel core. The bond hardness shall be -within-the -range of 20.4 to 36.0 Rockwell "C" Scale. Only virgin diamonds shall be used in the segments and they shall be in the size of 20 to 50 mesh. Minimum diamond content is measured as the number of carats per cubic inch of segment and shall be specified in Table I. Segment dimensions shall be as specified in Table L

2.5 ARBOR SIZE The arbor hole for all blade's shall be one (1) inch diameter and shall have a standard drive pinhole of 7/16 inch in diameter.

2.6 COLOR CODING All type A blades shall be silk-screened an orange color and type B blades shall be silk-screened a burgundy color for quick identification.

2.7 CUTTING SPEED All blades shall cut at a minimum speed of 40" per minute:

3. QUALITY ASSURANCE PROVISIONS

3.1 RESPONSIBILITY FOR TESTING Unless otherwise specified in the contract or purchase order, the supplier shall be responsible for the performance of all inspections and test requirements necessary to insure compliance with provisions of this specification. This action does not preclude subsequent inspection or testing by the STATE OF ALABAMA to further determine conformance with this specification or quality standards of workmanship, material, and construction techniques.

3.2 USING AGENCY TESTING The using agency will select one blade at random of each size ordered and remove two segments for testing as specified in paragraphs 3.2.1, 3.2.2, and 3.2.3. The blades selected will be returned to the vendor for repair at no additional cost to the using agency.

3.2.1 BOND HARDNESS The bond hardness will be tested using the Rockwell Scale "C" method for compliance-with-the requirements of paragraph 2.4.

3.2.2 DIAMOND CONTENT The bond will be dissolved and the diamonds will be weighed to determine conformance with the size requirements of paragraph 2.4.

3.2.3 DIAMOND SIZE The diamonds removed will be sieved to determine compliance of correct mesh size as specified in paragraph 2.4.

3.2.4 FAILURE TO MEET SPECIFICATIONS If any of the requirements and/or specifications are not met, all blades covered by the contract or purchase order will be returned to the vendor at his expense and order cancelled.

3-2-5 DELIVERY Failure to comply with quoted delivery schedule may result in the cancellation of the order. Vendor shall be responsible for shipment and billing to using agencies within the STATE OF ALABAMA as indicated on the purchase order. Freight shall always be prepaid.

4. PREPARATION FOR DELIVERY

4.1 PACKAGING Unless otherwise stated, normal commercial packaging and packing will be acceptable. All packing shall be adequate to protect contents from damage and to permit shipment by common carrier at the lowest applicable rate.

4.2 MARKING Shipping containers shall be marked to show contents, name of vendor, using agency, purchase order and contract number/if applicable.

5. NOTES Using agencies shall show the following information on procurement document:

- a. Title, number, and date of contract.
- b. Grade and size required (see 1.2)
- c. Packaging, packing, and marking if other than specified (see 4.1 and 4.2)

TABLE 1: BLADE SPECIFICATIONS

TYPE A- CURED CONCRETE														TYPE B- GREEN CONCRETE & ASPHALT											
BLADE DIAMETER	12"	12"	14"	14"	14"	14"	18"	18"	30"	30"	36"	12"	12"	14"	14"	18"	18"	30"	30"	30"	36"				
SLOT LENGTH	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"				
SLOT WIDTH	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	5/64"	5/64"	5/64"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	5/64"	5/64"	5/64"	5/64"				
KEYHOLE DIAMETER	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"				
CORE THICKNESS	.105	.105	.105	.105	.105	.105	.105	.105	.180	.180	.180	.105	.105	.105	.105	.105	.105	.180	.180	.180	.180				
DIAMOND CONTENT MINIMUM	21	21	24	24	24	24	24	24	30	30	30	24	24	30	30	30	30	30	30	30	30				
SEGMENT WIDTH	.125	.250	.125	.250	.375	.187	.250	.250	.210	.250	.250	.125	.250	.250	.125	.250	.187	.210	.250	.250	.250				
SEGMENT DEPTH MINIMUM	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"				
SEGMENT LENGTH	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937	1.937				
TOTAL LENGTH OF ALL SEGMENTS PER BLADE	34	34	40	40	40	50	50	50	82	82	98	34	34	40	40	50	50	82	82	82	98				

4